

Date: Fri, 10 Sep 93 04:30:19 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V93 #39
To: Ham-Homebrew

Ham-Homebrew Digest Fri, 10 Sep 93 Volume 93 : Issue 39

Today's Topics:

 How do dippers really work?
 Morse Keyboard replacement

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

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(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 10 Sep 1993 03:37:11 GMT
From: munnari.oz.au!bruce.cs.monash.edu.au!trlluna!titan!pcies4.trl.OZ.AU!
drew@uunet.uu.net
Subject: How do dippers really work?
To: ham-homebrew@ucsd.edu

The standard texts generally state that RF energy is "absorbed" or "sucked"
from the dipper coil, thus producing the dipping phenomenon. But this does
not explain why a higher Q circuit produces a deeper and sharper dip than a
low Q one for the same degree of coupling- remember, energy is only absorbed
by the loss, or resistive part of the circuit under test.

This is what I think actually happens; "When the field from the primary
coil (i.e. the dipper) energises the 'passive' coil, it will, if the
exciting frequency is at or near the resonant frequency of the passive
circuit; set up its own field in opposition (or "antiphase")_to the primary
field, which tends to lower the amplitude of oscillation in the primary
circuit"

If the coupling is sufficiently tight, oscillation may actually cease.

Is this a reasonable explanation? Suggestions anyone?

73, Drew, VK3XU.

Date: Fri, 10 Sep 1993 02:06:23 GMT
From: swrinde!sdd.hp.com!col.hp.com!news.dtc.hp.com!hpscit.sc.hp.com!hplextra!
opus!walker@network.ucsd.edu
Subject: Morse Keyboard replacement
To: ham-homebrew@ucsd.edu

In rec.radio.amateur.homebrew, jangus@skyld.tele.com (Jeffrey D. Angus) writes:

> > Any comments or suggestions?
>
> So, I guess BT could be used to clear the screen and SK would park the heads

Well, without getting silly, you would need to make extensions for full
ascii.

Looking at Morse, there are 26 letters in a space of 30 possible four-symbol
characters. That leaves 4 characters up for grabs:

Binary:	Morse:	Ascii:
0	.	e
1	-	t
00	..	i
01	.-	a
10	-.	n
11	--	m
000	...	s
001	..-	u
010	.-.	r
011	.--	w
100	-..	d
101	-.-	k
110	--.	g
111	---	o
0000	h
0001	...-	v
0010	f
0011	..--	UNUSED
0100	.-..	l
0101	.-.-	UNUSED
0110	.-.-	p
0111	.-.-	j

1000	-...	b
1001	-...-	p
1010	-.-.	c
1011	-.--	y
1100	--..	z
1101	--.-	q
1110	---.	UNUSED
1111	----	UNUSED

Actually, in international Morse, the UNUSED characters above are defined as various accented vowels, but for english usage, they are not needed. We can use these for things like <ESC>, <BS>, <TAB>, <SHIFT>, etc.

Here's some special characters already internationally defined:

MORSE:	ASCII:
-----	-----
RK (.-.-.-)	"."
GW (--..--)	","
HH (.....)	"BACKSPACE" (error)
BT (-...-)	"=" (double dash) - perhaps use this for carriage return
OS (---...)	":"
KR (-.-.-.)	";"
KK (-.--.-)	"(" or ")"
DN (-...-.)	"/"
AS (-.-...)	(wait) - perhaps use for "^S"
AR (-.-.-.)	(end of message) - perhaps use for "^D"
WG (-....)	""

Now add the hack that "C" prepended to any character is a control character:

CA (-.-...)	"^A"
CB (-.-....)	"^B"
CB (-.-.-.-)	"^C"
CD (-.-.-..)	"^D"
...	

Now you just need to do is define the rest of the punctuation characters:

.!@#\$\$%^&*()-_+={}[]\|'";:><,./?'`~

These could be mapped to digraphs starting with "-.-" for <punctuation>:

<punc>A (-.-.-)	.
<punc>B (-.-....)	!
<punc>C (-.-.-.-)	@
<punc>D (-.-.-..)	#

...

What I'd really like to hear from this group, though, is good algorithms for doing morse code detection in software... For instance, how do you optimally track a changing WPM rate?

--

Rick Walker

Date: 9 Sep 1993 21:26:09 -0600
From: swrinde!elroy.jpl.nasa.gov!avdms8.msfc.nasa.gov!europa.eng.gtefsd.com!
howland.reston.ans.net!spool.mu.edu!umn.edu!lynx.unm.edu!triton.unm.edu!news-
user@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <1993Sep7.033320.28801@mksol.dseg.ti.com>,
<1993Sep7.134439.22935@ke4zv.atl.ga.us>,
<1993Sep9.054942.11654@mksol.dseg.ti.com>s
Subject : Re: NASA select rcvr

In article <1993Sep9.054942.11654@mksol.dseg.ti.com>,
arthur blair <blair@mksol.dseg.ti.com> wrote:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>: SOTA was a 120 degree LNA feeding low loss cable to a single conversion
>: receiver with a 70 MHz IF and FM detector. Few people still use anything
>: so crude. Most systems now use a 15 to 30 degree LNB at the feedpoint
>
> Forgive my ignorance but... 120,15,30 degree? Do you mean beamwidth or
>Noise temperature or something else?

120 degree was the noise temperature rating of a Satellite Low Noise
Amplifier -- the older technology.

Newer technology uses LNB (Low noise block -- a amplifier and block converter
built into one component -- no need for a separate block converter like
what was used with the older stuff). 15 to 30 is also a noise figure --
same units as those used with the LNA (Kelvin I think). In satellite
terms, the lower noise figure you go, the better.

>Since I'm literally only interested in 1 channel do you think the old LNA/
>single conversion receiver would be sufficient? NASA select is C band.
>Since it sounds obsolete maybe I can get a deal on a dish/LNA combo.
>I'd like to keep the dish small though, since it'll probably
>have to sit on the roof to see low enough south. Whats the typical
>noise figure for the old LNA systems? Maybe I can do better with
>a narrow band LNA with a good enough noise figure to keep the

>dish small.?. Did they ever make small C band dishes/feeds?

NASA Select is indeed C-band -- Satcom F2R/13. Satcom F2R is a somewhat weaker bird (when considered to the newer satellites Galaxy 4, Galaxy 7, Galaxy 5, Satcom C3, Satcom C4...). Because of this, you will need a larger dish and a better degree LNA (or LNB) to get a sparkle free signal. If you have a 100 degree LNA, I'd recommend at least a 8 footer or so to get somewhat-sparkle-free pictures. If you go with the newer technology (25 deg LNB) you can get sparkle free pictures with a 6-7 foot dish. A smaller dish would really be giving you a picture with sparklies (a higher noise temp LNA/LNB would also).

The plus is that you can get a dish/LNA older technology system rather inexpensively -- but you'd have to put up with some sparklies.

Robert
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End of Ham-Homebrew Digest V93 #39
